

For the four satellites these observations yielded for the vertical diameters at mean distance the following angular dimensions :—

I.	1°176 ± 0°360
II.	1°281 ± 0°392
III.	1°725 ± 0°436
IV.	1°286 ± 0°447

—Note on the herpolodie (second communication), by M. Hess.—On the measurement of the specific volume of the saturated vapours, and on the value of the mechanical equivalent of heat, by M. A. Perot. Reversing the well-known process of Messrs. Fairbairn and Tait for determining the volume of a known mass of saturated vapour at a given temperature, the author finds the number expressing the mechanical equivalent of heat to be about 424.—Note on a registering hygrometer, by M. Alb. Nodon. This instrument, which is constructed on a principle analogous to that of Breguet's metallic thermometer, is contrived to work for ten consecutive days. Its indications are unaffected by a temperature ranging from 10° to 35° C.—Law determining the electric conductivity of saline solutions of mean concentration, by M. E. Bouty.—Relation between the coefficient of self-induction and the magnetic action of an electro-magnet, by M. Ledebor.—New magnetic maps of France, by M. Th. Moureaux. The observations, which have served as the groundwork of these charts, were mostly made during the years 1884 and 1885 under the direction of M. Mascart, at seventy-eight stations in every part of France, the results being all referred to January 1, 1885, by comparison with the curves of variation as determined with the magnetograph at the Observatory of the Parc Saint-Maur. From these observations the declination is shown to be least at Belfort (13° 59' 8"), greatest at Conquet (10° 25' 1"), varying in the north of France about 30' for a degree of longitude, and less in the south.—Summer isobars, winds, and cloudiness on the Atlantic, by M. L. Teisserenc de Bort. The maps embodying these data are based on the records of English and Dutch vessels, comprising 40,900 observations for each element, and on a report on the equatorial region published by the Meteorological Office.—Note on the earthquake in Brazil, by M. Cruls. Although traces of ancient volcanoes and more recent eruptive formations have been detected on the seaboard of Rio de Janeiro, the author considers that this seismic disturbance was not volcanic, but due to shrinking or some analogous movement of frequent occurrence in the crust of the earth.—Reply to some objections made to the memoir on microseismic observations, by M. T. Bertelli.—On the penta-sulphuret of phosphorus, by M. F. Isambert.—On the principle of equivalence in the phenomena of chemical equilibria, by M. H. Le Chatelier. The experimental law serving as the base of pure mechanics—two forces equal to a third are equal to each other, and reciprocally—is true also of chemical equilibria. But in order to eliminate the equivocal notion of *force*, the author substitutes for it another thus formulated: in every phenomenon of equilibrium two material systems equivalent in relation to a third will also remain equivalent in relation to any other system to which they may be opposed, and they are in mutual equilibrium when opposed to each other. This law is here verified in the case of vaporisation, dissociation, solubility, and under other conditions.—On monosodic orthophosphate and arseniate, by MM. A. Joly and H. Dufet.—On a combination of methylic alcohol and anhydrous baryta, by M. de Forcrand.—On the monochloracetate of butyl, by M. G. Gehring. In order to complete the series of monochloracetates, the author has prepared, and determined some of the physical properties of, this substance, adopting the same general method as that employed in the preparation of the monochloracetate of methyl.—On the development of the oesophagus, by M. P. de Meuron.—On the vascular system of *Dorocidaris papillata*, by M. H. Prouho.—On the crystals of gypsum in the pseudopotters' clays of the Paris district, by M. Stan. Meunier.—Preliminary note on the geological structure of the Lure range, Lower Alps, by M. W. Kilian. This range, which runs for 50 kilometres from the neighbourhood of Vilhosco to Monbrun (Vaucluse), appears to be intermediate between the Alpine and Pyrenean systems. A summary is given of its geological constituents, ranging from the Middle and Upper Jurassic to the Tertiary conglomerates and marls.—On the male fertilisations of *Arthropitus* and *Bornia*, by M. Renault.—A contribution to the study of pre-foetation and pre-efflorescence in fossil plants, by M. L. Crié.—Remarks on a meteor observed at the Trocadero on June 13, by M. L. Jaubert.

STOCKHOLM

Academy of Sciences, June 9.—On the Academy's Zoological Station in the province of Bohus, by Prof. Sven Lovén.—On the resistance of mixtures of acids against electrical conductivity, by Dr. S. Arrhenius.—A collection of ethnographical objects of Central American Indians, presented to the National Museum by the Swedish Consul-General in Guatemala, Mr. S. Ascoli, exhibited and explained by Prof. F. A. Smith.—On the new elementary body germanium, and some of its combinations, by Prof. L. Fr. Nilsson. The researches of Prof. Nilsson and Petterson, made at the request of Prof. Winkler, the discoverer of germanium, show that his suggestion that germanium might possibly be identical with Mendelejeff's ekasilicium is quite correct, and in accordance with the true facts.—Methods for the determination of elements of refraction in prisms having great refracting angles, by Mr. W. Ramsay.—On the mode of occurrence of the sand-worm stones in the Cambrian strata at Lugnäs, in Sweden, by Prof. A. G. Nathorst.

BOOKS AND PAMPHLETS RECEIVED

"The First Report upon the Fauna of Liverpool Bay and the Neighbouring Seas," Edited by Prof. Herdman (Longmans).—"L'Inclinaison des Vents" R. P. Marc Dechevrens (Chang Hai).—"Die Alchemie in Alter und Neuerer Zeit," Erster und Zweiter Theil, by H. Kopp (Winter, Heidelberg).—"An Elementary Treatise on Geometrical Optics," 2nd edition, revised, by W. S. Aldis (Deighton, Bell, and Co.).—"Records of the Saidapt Experimental Farm," by Chas. Benson (Keys, Madras).—"New Commercial Plants and Drugs," No. 9, by T. Christy (Christy).—"Bulletin of the Illinois State Laboratory of Natural History," Vol. II, Art. V. "Studies from the Contagious Diseases of Insects," by S. A. Forbes (Franks, Peoria).—"Cornell University: Proceedings in Memory of Louis Agassiz and in Honour of Hiram Sibley, June 17, 1885."

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